

What Is Claimed Is:

1. A direct conversion circuit comprising first to fourth mixers to which high frequency signals which are modulated in response to base band signals and a local oscillation signal having an equal frequency to that of the high frequency signal are inputted, and first and second multiplexer circuits which output components of a sum of two signals, wherein

a phase of the high frequency signals which are inputted to the first and second mixers and a phase of the high frequency signals which are inputted to the third and fourth mixers are made to differ from each other by  $\pi$ ;

wherein a phase of the local oscillation signals which are inputted to the first and third mixers and a phase of the local oscillation signals which are inputted to the second and fourth mixers are made to differ from each other by  $\pi/2$ ;

wherein the base band signals formed of an in-phase component which are respectively outputted from the first mixer and the third mixer are inputted to the first multiplexer circuit;

wherein the base band signals formed of an ortho-component which are respectively outputted from the second mixer and the fourth mixer are inputted to the second multiplexer circuit; and

wherein one of the base band signals formed of the in-phase component which is inputted to the first multiplexer circuit and one of the base band signals formed of the ortho-component which is inputted to the second multiplexer

circuit have respective phases thereof inverted from each other.

2. A direct conversion circuit according to claim 1, wherein the first and second multiplexer circuits respectively include a pair of transistors in which respective emitters are  
5 connected to each other and respective collectors are connected to a common load resistance, and wherein the two base band signals formed of the in-phase component and the two base band signals formed of the ortho-component are inputted to a base of one transistor and a base of another transistor.

10 3. A direct conversion circuit according to claim 1, wherein the first to fourth mixers and the first and second multiplexer circuits are respectively constituted of a balanced circuit.